

**Daffodil International University**

**Department of Software Engineering, FSIT**

**SWE-431 Project / Thesis**

**Project: Vaccine And Immunization (Send Reminder)**

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A project submitted in partial fulfillment of the requirement for the degree of Bachelor of Science in Software Engineering.

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**APPROVAL**

**DECLARATION**

I hereby declare that project titled **“Vaccine and Immunization”** has been completed by me under the supervision of Ms. Nusrat Jahan, Senior Lecturer, Department of Software Engineering Daffodil International University for the purpose of achieving degree of Bachelor of Science from Daffodil International University. This is also declared by me that neither this project nor any part of this project has been used or submitted elsewhere for any kind of degree or awards.

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**ABSTRACT**

In this modern era, day by day we are being dependent on latest technologies based on our regular needs. Nowadays everything is online based. We want every possible solution through online.“Vaccine And Immunization” is a web based application where any patient can register for specific vaccine. This system deals with collecting patient information and stores those information. People can find any registered health care provider contact information easily through this system. Each registered user of this system will have their own account information to access into this system. There is a scheduling option for each vaccine. This system will send reminder to patient when every next vaccine schedule arrives. Admin can control this system. Admin will provide any announcement or event notice regarding health care issues or vaccination. All the data are stored in this system are protected.

**CHAPTER 1**

**INTRODUCTION**

**1.1 Project Overview**

“Vaccine And Immunization” is a web based application for providing vaccine related services to patients. This system includes login and registration for any type of users to access into this system. Registered users will have their own account which can be updated by themselves. Patients can search health worker for their contact information. Patients can know about listed vaccine from this site. Patients can be assigned to any vaccine under specific health worker. Health worker can assign or update vaccine schedule which is assigned to any patient. Patients will get their vaccine reminder as per as their vaccine type and next vaccine schedule. This system will store registered users authenticated information which will be protected. Admin will control the whole system. Admin can make any announcement or create any event regarding health issue.

This system is fast, easy to use and user friendly, optimized in an efficient way.

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**1.2 Project Purpose**

Purpose of this project is to provide a convenient and efficient system to remind every vaccine taking patients about their vaccine schedules. To let know every user about all vaccine detailed information. Provide registered health worker information to approach them easily. Provide health related event /workshop information. Store patients information in a system based database in protected way.

**1.2.1 Background:** To stay healthy and not to be infected by any virus we have to take various kind of vaccine in many phases of life. Each vaccine has own time scheduling. Many patients take their vaccine from nearby clinic as per as vaccine schedule. What happened in many cases people do not know about vaccine details, many times they forget their next vaccine date etc. On the other hand, in our country a huge number of clinics till now do not use any online based system to record patient’s data they do it by their own.

**1.2.2 Benefits And Beneficiaries:** Using this system patient can easily get their vaccine schedule list, easily find health worker information. This system will provide detailed information about vaccine. Patient can get their vaccine reminder that is why they don’t have think about forgetting next vaccine date.

**1.2.3 Goal:** My special goal for this project is where clinics or hospital can use system based database for recording patient’s data. To notify every patient regarding next vaccine date. By using this system user can know about every type of vaccine and they will know where and the health related event will be held.

**1.3 Stakeholders**

In this project stakeholders are:

1. General website visitors
2. Patients
3. Health Worker / Healthcare Provider
4. Admin
5. Web developer
6. Tester

**1.4 Proposed System Model**

Proposed system model means what a web developer is going to do with this project. How does he build and differentiate his project other than existing project or features. Throughout the process of building this system I have followed waterfall model, figure [1].

**1.5 Project Schedule**

Project schedule means a time table including starts date and end dates, milestones, what tasks need to be done and make product deliverables within the time. It is consist of sequenced workflow means what task needs to be performed before performing related any task.

**1.5.1 Gantt Chart:** A gantt chart shows timeline of a project. It conveys the project information visually and indicates the present status of the running project. It helps planning and scheduling project including start date, finish date, and all tasks are broken down, figure [2].

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Weeks→**  **Works↓** | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| Project Planning |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Requirement Collection |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Requirement Analysis |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Feasibility Study |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Project Proposal |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| UML Diagrams |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Project User Interface |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Mid-term defense |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Development |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Testing |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Documentation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Final Defense |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Figure (2): Gantt chart

**1.5.2 Release Plan**

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| --- | --- | --- | --- |
| **Activities** | **Task Name** | **Time Duration** | **Total Week** |
| **Planning** | Interviews | Week-1 | 1 |
| Brainstorming Session |
| Problem Defining |
| **Requirement** | Requirement Collection | Week-2, Week-3 ,Week-4 | 3 |
| Requirement Analysis |
| **Feasibility Study** | Feasibility Study & Analysis | Week-4, Week-5 | 2 |
| **Design specification** | UML Diagrams | Week-7, Week-8  Week-9, Week-10 | 3 |
| Project User Interface |
| **Development** | Coding | Week-9, Week-10, Week-11,Week-12, Week-13 | 5 |
| Implementation |
| **Testing** |  | Week-10, Week-13 | 2 |
| **Delivery** |  | Week -16 | 1 |

**CHAPTER 2**

**SOFTWARE REQUIREMENTS SPECIFICATION**

**2.1 Software Requirements Specification**

Software requirement specification describes how a software system needs to be developed. In many cases it prevents project failure. It provides a detailed overview of the mentioned product and targeted audience, goals. It includes all functionalities and features of a product which need to be fulfilled as per as stakeholder needs.

**2.2 Functional Requirements:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SRS No** | **Name** | **Description** | **Type** | **Priority** |
| 01 | Registration | User must be registered for their own profile and to access this system. | Functional | High |
| 02 | Login | To access user dash board user has to login with login credentials. | Functional | High |
| 03 | Create Profile | After successful registration every registered user will have own profile. | Functional | High |
| 04 | Assign Vaccine | Health worker can assign vaccine to registered patient. | Functional | High |
| 05 | Notify User | Patient will get notify about each vaccine schedule | Functional | High |
| 06 | Health Worker information | Patient can search or get available worker’s contacts details. | Functional | Medium |
| 07 | Event details | Admin can provide notice regarding any health related event. | Functional | Medium |

**2.3 Non-Functional Requirements**

Non-Functional requirements for this system are given below:

* Availability-System will be available 24hrs
* Reliability-System is reliable, all data are protected.
* Usability-This system is user friendly.
* Security-System is secured.

**2.4 Data Requirements**

**2.4.1 Patient Registration**

* Patient name
* Patient email
* Contact information
* Password
* Address

**2.4.2 Health Worker Registration**

* Health worker name
* Email
* Contact information
* Password
* Address

**2.4.3 Health Worker Registration**

* Patient name
* Email
* Contact information
* Age
* Gender
* Vaccine date
* Health Worker Name

**2.5 Performance Requirements**

Maintaining performance of any software is a very important job. To maintain performance of this software I have followed some requirements.

**2.5.1 Speed and Latency Requirements**

* The system should be faster.
* Visitor’s search result should be show within seconds
* Browser result depends on internet speed.
* Page loading time is average.
* Document upload speed is very high.

**2.5.2 Accuracy Requirements**

* The system or search result will show accurate data.
* Data input should in right pattern to get actual result.

**2.5.3 Capacity Requirements**

* Many users, site visitors can use or visit this site.
* Has the capacity to hold or save huge data.
* A lot of data are under control of this system.

**2.6 Dependability Requirements**

Dependability means user’s trust and user’s confidence which operates with user’s expectation from any software. It is related with availability, Reliability of any system.

**2.6.1 Availability Requirements**

* This system will be available to user 24/7.
* User can browser this site at any time.

**2.6.2 Reliability Requirements**

* In case of any emergency data back-up is available.
* There is no chance of losing recorded data.
* This system is properly validated, verified and tested.

**2.7 Maintainability Requirements**

Any web based application is not static. It needs to be upgraded after certain period of time. This system is easy in maintenance. It can adapt new requirements, modification without effect main functionalities.

**2.8 Security Requirements**

It is very important to provide best security services to users.

**2.8.1 Access Requirements:** Providing valid information, login credentials, only authorized user can access to this system and can use specific area based on user type. Admin has the full control of this system. Any unauthorized person or third party cannot access to this system.

**2.8.2 Privacy Requirements**: It is the most important task to provide privacy of user who is using this system. Every recorded data of users are important and sensitive. That is why all data of the central database belong to users are protected.

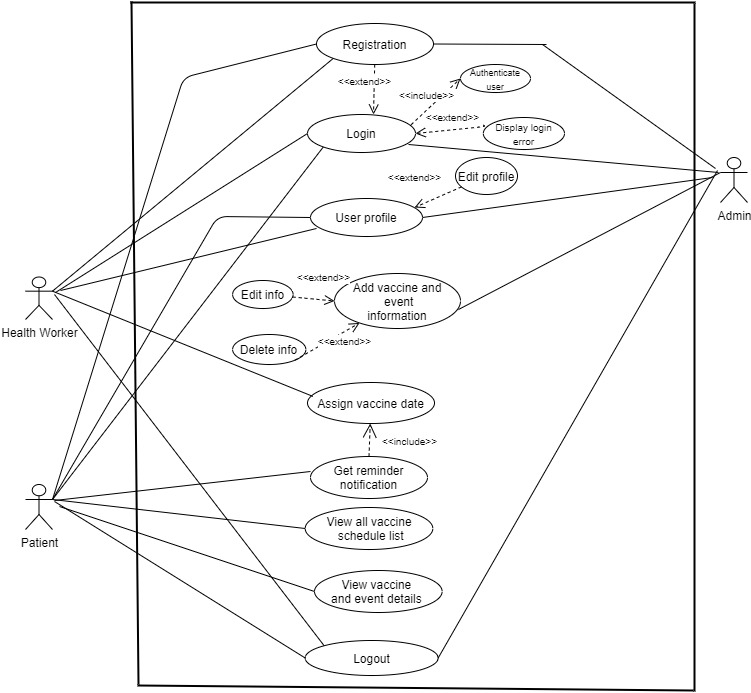
**2.8 Usability and Human-Interaction Requirements**

While developing any system, the developer’s main target is to make it user friendly. I have made it user friendly to every user while browsing this system.

**CHAPTER 3**

**SYSTEM ANALYSIS**

**3.1 Use Case Diagram**

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**3.1 Use Case Description**

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| --- | --- | --- |
| **Use Case No.** | 01 | |
| **Use Case Name** | Registration | |
| **Actor** | Patient/Health-Worker | |
| **Trigger** | A new user wants to access this system | |
| **Brief Description:** | To create patient or health worker profile, access features, to get notify users have to be registered with valid information. | |
| **Precondition** | Users have to provide valid information of registration credentials. | |
| **Post condition** | After successful registration they can login to the system with required information. | |
| **Flow Of Events** | Actor | System |
| 1. User requests for registration form.  2. User submits the registration form with information. | * 1. System displays the registration form.   2.1 System stores information and sends confirmation message. |
| **Exception Condition** | 1. If email address is not valid system will redirect to registration page.  2. Password and confirm password should not match it will show error message.  3. If required field is empty, system will show message regarding this matter. | |

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| **Use Case No.** | 02 | |
| **Use Case Name** | Login | |
| **Actor** | Patient/Health-Worker/Admin | |
| **Trigger** | A registered user wants to access his dashboard and opens login window. | |
| **Brief Description:** | After successful registration every user can login to their dash board with valid login credentials. | |
| **Precondition** | Users have to be registered with valid email, password. | |
| **Post condition** | After successful registration they can login to the system with required information. | |
| **Flow Of Events** | Actor | System |
| 1. User requests for login form.  2. User submits the login form with email, password. | * 1. System displays the login form.   2.1 System checks if login  Credentials are valid or not.  2.2 System authenticated users and starts a session. |
| **Exception Condition** | 1. If the user is new, system will redirect to login page.  2. If credentials are not valid login will be failed and redirect to login page. | |

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| **Use Case No.** | 03 | |
| **Use Case Name** | User Profile | |
| **Actor** | Patient/Health-Worker/Admin | |
| **Trigger** | Users open registration form and submit it. | |
| **Brief Description:** | When any user registration done system will create user profile adding information provided by users. | |
| **Precondition** | User has to done registration with valid information. | |
| **Post condition** | System will provide a user profile and user can update it. | |
| **Flow Of Events** | Actor | System |
| 1. User submits the registration form.  2. User can login to profile.  3. User can update profile. | 1.1 System authenticates user and create user profile. |
| **Exception Condition** | 1. Without authenticate login credentials user can not access to user account.  2. Login failed will redirect to login page. | |

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| **Use Case No.** | 04 | |
| **Use Case Name** | Assign Vaccine | |
| **Actor** | Health-Worker | |
| **Trigger** | Health worker login to system and opens patient list. | |
| **Brief Description:** | To assign vaccine to any specific patient, health worker needs to login. After that he will be able to find listed patient for assign vaccine. | |
| **Precondition** | There should be patient list. | |
| **Post condition** | Selected patient will have vaccine date list under specific health worker. | |
| **Flow Of Events** | Actor | System |
| 1. Health worker requests for patient list.  2. Health worker select patient and assign vaccine. | 1.1 System displays patient list.  2.1 System stores information. |
| **Exception Condition** | 1. System can fail to load page.  2. Without patient list no vaccine will be assign. | |

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| **Use Case No.** | 05 | |
| **Use Case Name** | View all vaccine schedule list | |
| **Actor** | Patient | |
| **Trigger** | Patient wants to see vaccine list and click on the page link. | |
| **Brief Description:** | Who has been assigned to any vaccine can see all schedule lists after login to dash board. | |
| **Precondition** | Patient must be assigned to any vaccine. | |
| **Post condition** | Patient can see vaccine list and all dates regarding vaccine. | |
| **Flow Of Events** | Actor | System |
| 1. Patient login to the system.  2. Patient requests for vaccine schedule list. | 1.1 System authenticates patient.  2.1 System displays list with all information. |
| **Exception Condition** | N/A | |

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| **Use Case No.** | 06 | |
| **Use Case Name** | Get reminder notification | |
| **Actor** | Patient | |
| **Trigger** | Patient clicks on the notification link. | |
| **Brief Description:** | Patient who has been assigned to vaccine will get notified as per as their vaccine schedule date. | |
| **Precondition** | Patient must be assigned to any vaccine date and to next due date. | |
| **Post condition** | Patient will be reminded on every vaccine date. | |
| **Flow Of Events** | Actor | System |
| 1. Patient login to the system.  2. Patient clicks on the notification. | 1.1 System authenticates patient.  2.1 System displays the notification regarding vaccine date. |
| **Exception Condition** | 1. Without having any vaccine date, there will be no notification available. | |

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| **Use Case No.** | 07 | |
| **Use Case Name** | Add vaccine/event details | |
| **Actor** | Admin | |
| **Trigger** | Admin clicks on add button | |
| **Brief Description:** | Admin wants to provide information about vaccine details or upcoming any event details. | |
| **Precondition** | Admin must be logged in and there must be add field. | |
| **Post condition** | Admin successfully add information. Any site visitor can see these information | |
| **Flow Of Events** | Actor | System |
| 1. Admin login to the system.  2. Admin requests for adding form.  3. Admin adds vaccine/event details. | 1.1 System authenticates admin.  2.1 System displays adding form.  3.1 System stores information and shows them to users. |
| **Exception Condition** | N/A | |

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| --- | --- | --- |
| **Use Case No.** | 08 | |
| **Use Case Name** | View vaccine or event details | |
| **Actor** | General visitors/Patients/Health worker | |
| **Trigger** | User clicks on vaccine or event details link. | |
| **Brief Description:** | Any user of this site can view listed vaccine details and about any events posted by admin. | |
| **Precondition** | Admin must provide vaccine or event details. | |
| **Post condition** | .Any site visitor can see vaccine or event detailed information. | |
| **Flow Of Events** | Actor | System |
| 1. User clicks on the view link. | 1.1 System shows the vaccine or event details. |
| **Exception Condition** | 1. System can fail to load page. | |